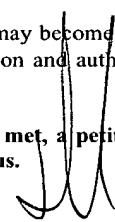


|  |  |  |  |   |
|--|--|--|--|---|
| FORM PTO-1390<br>(REV. 12-2001)  |  | U S DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE |  | ATTORNEY'S DOCKET NUMBER  |
| <b>TRANSMITTAL LETTER TO THE UNITED STATES<br/>DESIGNATED/ELECTED OFFICE (DO/EO/US)<br/>CONCERNING A FILING UNDER 35 U.S.C. 371</b>  |  |  |  | 13833.0011  |
| INTERNATIONAL APPLICATION NO.<br>PCT/FR99/02289  |  | INTERNATIONAL FILING DATE<br>27 September 1999         |  | U S APPLICATION NO. (If known, see 37 CFR 1.5<br><b>10/088994</b> |
| TITLE OF INVENTION<br>COSMETIC COMPOSITION BASED ON PARTIALLY NEUTRALIZED ORGANOSILICON COMPOUNDS  |  |  |  | PRIORITY DATE CLAIMED<br>N/A                                      |
| APPLICANT(S) FOR DO/EO/US<br>SAMAIN, Henri; ROLLAT, Isabelle; JEANNE ROSE, Valerie; SANCHEZ, Clement   |  |  |  |   |
| Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:  |  |  |  |   |
| <p>1. <input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a filing under 35 U.S.C. 371.</p> <p>2. <input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a filing under 35 U.S.C. 371.</p> <p>3. <input checked="" type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.</p> <p>4. <input checked="" type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (Article 31).</p> <p>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2))</p> <p>a. <input checked="" type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau).</p> <p>b. <input type="checkbox"/> has been communicated by the International Bureau.</p> <p>c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</p> <p>6. <input checked="" type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).</p> <p>a. <input checked="" type="checkbox"/> is attached hereto.</p> <p>b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4).</p> <p>7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))</p> <p>a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau).</p> <p>b. <input type="checkbox"/> have been communicated by the International Bureau.</p> <p>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</p> <p>d. <input checked="" type="checkbox"/> have not been made and will not be made.</p> <p>8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</p> <p>9. <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).</p> <p>10. <input type="checkbox"/> An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</p> |  |  |  |   |
| <p><b>Items 11 to 20 below concern document(s) or information included:</b></p> <p>11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</p> <p>12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</p> <p>13. <input checked="" type="checkbox"/> A <b>FIRST</b> preliminary amendment.</p> <p>14. <input type="checkbox"/> A <b>SECOND</b> or <b>SUBSEQUENT</b> preliminary amendment.</p> <p>15. <input type="checkbox"/> A substitute specification.</p> <p>16. <input type="checkbox"/> A change of power of attorney and/or address letter.</p> <p>17. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.</p> <p>18. <input type="checkbox"/> A second copy of the published international application under 35 U.S.C. 154(d)(4).</p> <p>19. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).</p> <p>20. <input checked="" type="checkbox"/> Other items or information:<br/>PCT Request - Form PCT/RQ/101<br/>IPEA - Form PCT/IPEA/409<br/>Forms PCT/IB/301, 308 and 332</p>   |  |  |  |   |

|  |  |   |              |              |      |              |           |   |           |                    |         |   |           |   |  |            |  |   |  |  |  |        |
|--|--|---|--------------|--------------|------|--------------|-----------|---|-----------|--------------------|---------|---|-----------|---|--|------------|--|---|--|--|--|--------|
| U.S. APPLICATION NO. (If none, see 37 CFR 1.492(e))<br><b>10/088994</b>  | INTERNATIONAL APPLICATION NO<br>PCT/FR99/02289 | ATTORNEY'S DOCKET NUMBER<br>13833.0011  |              |              |      |              |           |   |           |                    |         |   |           |   |  |            |  |   |  |  |  |        |
| 21. <input checked="" type="checkbox"/> The following fees are submitted:<br><b>BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)):</b><br>Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO. .... <b>\$1040.00</b><br>International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO .... <b>\$890.00</b><br>International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO .... <b>\$740.00</b><br>International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) .... <b>\$710.00</b><br>International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) .... <b>\$100.00</b><br><b>ENTER APPROPRIATE BASIC FEE AMOUNT =</b> <b>\$ 890</b> |  | <b>CALCULATIONS PTO USE ONLY</b>  |              |              |      |              |           |   |           |                    |         |   |           |   |  |            |  |   |  |  |  |        |
| Surcharge of <b>\$130.00</b> for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input checked="" type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).<br><table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; padding: 2px;">CLAIMS</td> <td style="width: 25%; padding: 2px;">NUMBER FILED</td> <td style="width: 25%; padding: 2px;">NUMBER EXTRA</td> <td style="width: 25%; padding: 2px;">RATE</td> </tr> <tr> <td>Total claims</td> <td>12 - 20 =</td> <td>0</td> <td>x \$18.00</td> </tr> <tr> <td>Independent claims</td> <td>1 - 3 =</td> <td>0</td> <td>x \$84.00</td> </tr> <tr> <td colspan="2">MULTIPLE DEPENDENT CLAIM(S) (if applicable)</td> <td colspan="2">+ \$280.00</td> </tr> <tr> <td colspan="4" style="text-align: center;"><b>TOTAL OF ABOVE CALCULATIONS =</b> <b>\$ 1020</b></td> </tr> </table>  |  | CLAIMS  | NUMBER FILED | NUMBER EXTRA | RATE | Total claims | 12 - 20 = | 0 | x \$18.00 | Independent claims | 1 - 3 = | 0 | x \$84.00 | MULTIPLE DEPENDENT CLAIM(S) (if applicable) |  | + \$280.00 |  | <b>TOTAL OF ABOVE CALCULATIONS =</b> <b>\$ 1020</b> |  |  |  | \$ 130 |
| CLAIMS   | NUMBER FILED                                   | NUMBER EXTRA  | RATE         |              |      |              |           |   |           |                    |         |   |           |   |  |            |  |   |  |  |  |        |
| Total claims   | 12 - 20 =                                      | 0   | x \$18.00    |              |      |              |           |   |           |                    |         |   |           |   |  |            |  |   |  |  |  |        |
| Independent claims   | 1 - 3 =  | 0   | x \$84.00    |              |      |              |           |   |           |                    |         |   |           |   |  |            |  |   |  |  |  |        |
| MULTIPLE DEPENDENT CLAIM(S) (if applicable)  |  | + \$280.00  |              |              |      |              |           |   |           |                    |         |   |           |   |  |            |  |   |  |  |  |        |
| <b>TOTAL OF ABOVE CALCULATIONS =</b> <b>\$ 1020</b>  |  |   |              |              |      |              |           |   |           |                    |         |   |           |   |  |            |  |   |  |  |  |        |
| <input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.<br><b>SUBTOTAL =</b> <b>\$ 1020</b>   |  | \$  |              |              |      |              |           |   |           |                    |         |   |           |   |  |            |  |   |  |  |  |        |
| Processing fee of <b>\$130.00</b> for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).<br><b>TOTAL NATIONAL FEE =</b> <b>\$ 1020</b>  |  | \$  |              |              |      |              |           |   |           |                    |         |   |           |   |  |            |  |   |  |  |  |        |
| Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). <b>\$40.00</b> per property +<br><b>TOTAL FEES ENCLOSED =</b> <b>\$ 1020</b>   |  | \$  |              |              |      |              |           |   |           |                    |         |   |           |   |  |            |  |   |  |  |  |        |
| <input type="checkbox"/> <b>Amount to be refunded:</b> <b>\$</b><br><input type="checkbox"/> <b>charged:</b> <b>\$</b>   |  |   |              |              |      |              |           |   |           |                    |         |   |           |   |  |            |  |   |  |  |  |        |
| a. <input checked="" type="checkbox"/> A check in the amount of <b>\$ 1020</b> to cover the above fees is enclosed.<br>b. <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.<br>c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>19-4293</u> . A duplicate copy of this sheet is enclosed.<br>d. <input type="checkbox"/> Fees are to be charged to a credit card. <b>WARNING:</b> Information on this form may become public. <b>Credit card information should not be included on this form.</b> Provide credit card information and authorization on PTO-2038.   |  |   |              |              |      |              |           |   |           |                    |         |   |           |   |  |            |  |   |  |  |  |        |
| <b>NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.</b>  |  |   |              |              |      |              |           |   |           |                    |         |   |           |   |  |            |  |   |  |  |  |        |
| SEND ALL CORRESPONDENCE TO:<br>STEPTOE & JOHNSON LLP<br>1330 Connecticut Ave., N.W.<br>Washington, D.C. 20036<br>Tel: (202) 429-3000   |  | SIGNATURE<br><br>D. Douglas Price<br>NAME<br>24,514<br>REGISTRATION NUMBER |              |              |      |              |           |   |           |                    |         |   |           |   |  |            |  |   |  |  |  |        |

ATTY. DKT. 13833.0011

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Henri SAMAIN et al

Serial No.

Filed: Herewith

For: COSMETIC COMPOSITION BASED ON PARTIALLY  
NEUTRALIZED ORGANOSILICON COMPOUNDS

**PRELIMINARY AMENDMENT**

Asst. Commissioner of Patents  
Washington, D.C. 20231

Sir:

Prior to initial examination, please amend the above-  
identified application as follows:

**IN THE ABSTRACT:**

Add the Abstract of the Disclosure appended hereto.

**IN THE SPECIFICATION:**

Page 1, replace the second paragraph at lines 8-18 as  
follows:

--It is common practice to use organic compounds such as polymers to prepare cosmetic compositions for treating the hair. For example, polymers are used that give, on drying, solid materials for fixing the hairstyle in a shape. Such materials are also used to give shape-holding effects. Polymer compounds, such as polysiloxanes, are also used to give haircare effects, particularly to damaged hair or hair that is difficult to disentangle. Cosmetic compositions containing these polymers are applied to the hair and left to dry or rinsed out before proceeding to dry.--

Page 1, replace the fourth paragraph at lines 21-29 as follows:

--The first drawback lies in the fact that, when the polymers are used in compositions above a certain concentration, the compositions obtained are difficult to apply due to the increase in the viscosity of the compositions. This difficulty in applying the compositions leads to the hair being overloaded in certain areas and thus to cosmetic defects and also involves certain parts of the hair receiving less of the compositions, which, in the end, induces a reduced effect on these areas.--

Page 1, replace the last paragraph at lines 30-34 through page 2, first two lines, as follows:

--The second drawback lies in the fact that these compositions are occasionally difficult to use. Specifically, polymer compounds of low water solubility require the use of an organic solvent or a mixture of organic solvents. The use of an organic solvent entails several problems, for instance environmental problems and problems affecting the cosmetic quality of the hair.--

Page 2, replace the first-fourth full paragraphs at lines 3-31 as follows:

--To overcome these drawbacks, attention has thus turned toward the use of polymer compounds that have been made partially water-soluble. Thus, certain polymer compounds may be used in water without adding any co-solvent. In this case, the limitation lies in the fact that these polymer compounds are partially, or even totally, removed by rinsing the hair. Consequently, in this case, the effect due to the polymer compounds is very limited after rinsing. Ultimately, this limits the effect of rinse-out treatments (shampooing, conditioning), but also reduces the advantage of such compositions used in leave-in mode (hairsetting lotions, mousses, lacquers, etc.) since the user loses the effect acquired by the treatment when the user washes the hair.

Efforts have thus been devoted toward finding compounds for formulating cosmetic compositions that can be used in water and that retain their effect when the hair is rinsed.

Thus, U.S. Patent No. 4,344,763 (Gillette) describes cosmetic compositions comprising an organosiloxane monomer such as an aminoalkylalkoxysilane and an organic titanate dissolved in an alcohol.

More specifically, the patent describes a process for shaping the hair which consists in moistening the hair with water and then in applying a solution containing, in isopropanol, from 0.5% to 15% by weight of an aminoalkylalkoxysilane and from 0.005% to 1.5% by weight of an organic titanate, and then in placing the hair in the desired shape.--

Page 3, the second full paragraph at lines 4-10 have been replaced as follows:

--A process has also been disclosed, in EP 113 992, for simultaneously fixing and conditioning the hair using a composition that is stable in the absence of moisture, containing (A) a siloxane oligomer containing at least one nitrogen-hydrogen bond, and (B) an anhydrous, readily hydrolyzable additive chosen from titanates, zirconates, vanadates, germanates, and mixtures thereof.--

Page 3, last paragraph at lines 31-33 through page 4, lines 1-6 has been replaced as follows:

--The inventors have found, surprisingly, that it is possible to formulate cosmetic compositions not requiring the use of an organic solvent and having an effective, rinse-fast cosmetic effect, without the risk of problems of the hair being charged in the event of overloading, by using in these compositions unpolymerized or relatively unpolymerized, water-soluble organosilicon compounds comprising at least one basic and partially neutralized chemical function.--

Page 4, the second and third full paragraphs have been replaced as follows:

--It has been observed that when such compositions are applied, pronounced cosmetic effects are obtained without any problems in the event of overloading, and the effects of which are very rinse-fast and wash-fast.

According to the invention, the cosmetic compositions, in particular for treating the hair, comprise, in a cosmetically acceptable aqueous medium, at least 0.02% by weight, relative to the total weight of the composition, of one or more unpolymerized or relatively unpolymerized, water-soluble organosilicon compounds chosen from organosilanes comprising one silicon atom and organosiloxanes comprising two or three silicon

atoms, the organosilicon compounds also comprising at least one basic chemical function and at least two hydrolyzable or hydroxyl groups per molecule, characterized in that the compositions comprise an amount of a neutralizing agent such that the unpolymerized or relatively unpolymerized organosilicon compounds are neutralized to a proportion of from 1/1000 to 99/100 and preferably from 0.2/100 to 70/100.--

Page 5, the last three subparagraphs at lines 26-28 have been replaced as follows:

--R<sub>4</sub> represents a halogen or an OR' or R'<sub>1</sub> group;

R<sub>5</sub> represents a halogen or an OR" or R'<sub>2</sub> group;

R<sub>6</sub> represents a halogen or an OR'' or R'<sub>3</sub> group;--

Page 6, the second and third paragraphs at lines 7-14 have been replaced as follows:

--at least two of the groups R<sub>4</sub>, R<sub>5</sub> and R<sub>6</sub> being other than the groups R'<sub>1</sub>, R'<sub>2</sub> and R'<sub>3</sub>.

Preferably, R<sub>1</sub>, R<sub>2</sub>, R', R" and R'', R'<sub>1</sub>, R'<sub>2</sub> and R'<sub>3</sub> represent a C<sub>1</sub> to C<sub>12</sub> alkyl group, a C<sub>6</sub> to C<sub>14</sub> aryl group, a (C<sub>1</sub> to C<sub>8</sub>)alkyl(C<sub>6</sub> to C<sub>14</sub>)aryl group or a (C<sub>6</sub> to C<sub>14</sub>)aryl(C<sub>1</sub> to C<sub>8</sub>)alkyl group; and R<sub>3</sub> is preferably a C<sub>1</sub> to C<sub>12</sub> alkyl group, a C<sub>6</sub> to C<sub>14</sub> aryl group, a (C<sub>1</sub> to C<sub>8</sub>)alkyl(C<sub>6</sub> to C<sub>14</sub>)aryl group or a (C<sub>6</sub> to C<sub>14</sub>)aryl(C<sub>1</sub> to C<sub>8</sub>)alkyl group.--

Page 6, the second-fourth subparagraphs at lines 21-23 have been replaced as follows:

--R'<sub>4</sub> represents a halogen or an OR<sub>11</sub> group;

R<sub>7</sub> represents a halogen or an OR<sub>10</sub> or R"<sub>1</sub> group

R<sub>9</sub> represents a halogen or an OR<sub>8</sub>, R"<sub>2</sub> or R<sub>3</sub>NR<sub>1</sub>R<sub>2</sub> group;--

Page 7, the fifth full paragraph at lines 11-17 has been replaced as follows:

--One important aspect of the compositions of the invention is that the unpolymerized or relatively unpolymerized organosilicon compounds are partially neutralized using a neutralizing agent or pH regulator, such that the neutralization reaches 1/1000 to 99/100 and better still from 0.2/100 to 70/100. More preferably, the neutralization is from 0.2/100 to 60/100.--

Page 11, the last paragraph at lines 17-20 has been replaced as follows:

--The compositions are introduced into an aerosol can in a proportion of 65 g. The aerosol can is fitted with a 51 P valve and a CO<sub>2</sub> 045 diffuser. 35 g of dimethyl ether are added to each can.--

Page 13, the last paragraph at lines 20-24 has been replaced as follows:

--The results show that with the partially neutralized compositions according to the invention a better feel quality after disentangling is obtained, in leave-in application, compared with a non-neutralized composition.--

IN THE CLAIMS:

Cancel claims 1-10 and substitute the following new claims therefor:

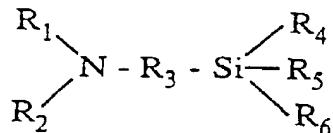
--11. (New) A cosmetic composition comprising, in a cosmetically acceptable aqueous medium, at least 0.02% by weight, relative to the total weight of the composition, of at least one substantially unpolymerized water-soluble organosilicon compound, the organosilicon compound being a silane having one silicon atom or a siloxane having two or three silicon atoms, the organosilicon compound also having at least one basic chemical function and at least two hydrolyzable or hydroxyl groups per molecule, the composition containing a sufficient amount of a neutralizing agent such that the organosilicon compound is neutralized to a proportion of from 1/1000 to 99/100.

12. (New) The cosmetic composition of claim 11, wherein the organosilicon compound represents at least 0.5% and up to 50% by weight of the composition.

13. (New) The composition of claim 11, wherein the basic chemical function of the organosilicon compound is a primary, secondary or tertiary amine.

14. (New) The composition of claim 11, wherein the hydrolyzable groups are alkoxy, aryloxy or halogen groups.

15. (New) The cosmetic composition of claim 11, wherein the organosilicon compound has the formula:



in which:

R<sub>4</sub> represents a halogen or an OR' or R'₁ group;

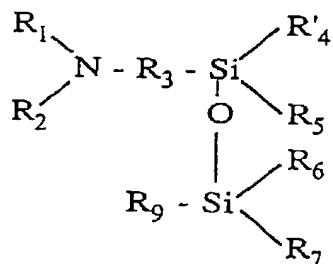
$R_5$  represents a halogen or an  $OR''$  or  $R'_2$  group;

$R_6$  represents a halogen or an  $OR''$  or  $R'_3$  group;

$R_1$ ,  $R_2$ ,  $R_3$ ,  $R'$ ,  $R''$ ,  $R'''$ ,  $R'_1$ ,  $R'_2$  and  $R'_3$  represent, independently of each other, a substituted or unsubstituted, saturated or unsaturated, linear or branched hydrocarbon-based group,

$R_1$ ,  $R_2$ ,  $R'$ ,  $R''$  and  $R'''$  may represent, independently of each other, hydrogen, at least two of the groups  $R_4$ ,  $R_5$  and  $R_6$  being other than the groups  $R'_1$ ,  $R'_2$  and  $R'_3$ .

16. (New) The cosmetic composition of claim 11, wherein the organosilicon has the formula:



in which:

$R'_4$  represents a halogen or an  $OR_{11}$  group;

$R_5$  represents a halogen or an  $OR''$  or  $R'_2$  group;

$R_6$  represents a halogen or an  $OR''$  or  $R'_3$  group;

R<sub>7</sub> represents a halogen or an OR<sub>10</sub> or R"<sub>1</sub> group;

$R_9$  represents a halogen or an  $OR_8$ ,  $R''_2$  or  $R_3NR_1R_2$  group;

$R_1$ ,  $R_2$ ,  $R_3$ ,  $R''$ ,  $R'''$ ,  $R'_2$  and  $R'_3$  represent, independently of each other, a substituted or unsubstituted, saturated or unsaturated, linear or branched hydrocarbon-based group;

R<sub>1</sub>, R<sub>2</sub>, R'' and R''' may represent, independently of each other, hydrogen, at least two of the groups R<sub>5</sub> and R<sub>6</sub> being other than the groups R'<sub>2</sub> and R'<sub>3</sub>;

R''<sub>1</sub>, R''<sub>2</sub>, R<sub>8</sub>, R<sub>10</sub> and R<sub>11</sub> represent a substituted or unsubstituted, saturated or unsaturated, linear or branched hydrocarbon-based group;

R<sub>11</sub>, R<sub>10</sub> and R<sub>8</sub> may represent, independently of each other, hydrogen, at least one of the groups R<sub>6</sub>, R<sub>7</sub> and R<sub>9</sub> denoting a halogen or an OR'', OR<sub>10</sub> or OR<sub>8</sub> group.

17. (New) The cosmetic composition of claim 16, wherein the groups R<sub>1</sub>, R<sub>2</sub>, R', R'<sub>1</sub>, R'<sub>2</sub>, R'<sub>3</sub>, R'', R''', R''<sub>1</sub>, R''<sub>2</sub>, R<sub>8</sub>, R<sub>10</sub> and R<sub>11</sub> are a C<sub>1</sub> to C<sub>12</sub> alkyl radical, a C<sub>6</sub> to C<sub>14</sub> aryl radical, a (C<sub>1</sub> to C<sub>8</sub>)alkyl(C<sub>6</sub> to C<sub>14</sub>)aryl radical or (C<sub>6</sub> to C<sub>14</sub>)aryl(C<sub>1</sub> to C<sub>8</sub>)alkyl radical.

18. (New) The composition of claim 11, wherein the neutralizing agent is an acid.

19. (New) The composition of claim 18, wherein the neutralizing agent is hydrochloric acid, nitric acid or a mono-, di- or tricarboxylic organic acid.

20. (New) The composition of claim 11, wherein the composition is in the form of a hair product.

21. (New) The composition of claim 20, wherein the composition is in the form of a hair product for holding the hair or for shaping the hair.

22. (New) The composition of claim 11, wherein the organosilicon compound is neutralized to a proportion of from 0.2/100 to 70/100.--

R E M A R K S

The specification has been amended to make minor editorial changes, original claims 1-10 have been cancelled in lieu of new claims 11-22 presented herewith, and an Abstract of the Disclosure has been added.

Attached hereto is a marked-up version of the changes made to the specification by the present Amendment. The attachment is captioned "Version with markings to show changes made."

In view of the foregoing, early action on the merits is respectfully requested.

Respectfully submitted,



D. Douglas Price  
Reg. No. 24,514

STEPTOE & JOHNSON LLP  
1330 Connecticut Ave., N.W.  
Washington, D.C. 20036  
Tel: (202) 429-6748

VERSION WITH MARKING TO SHOW CHANGES MADE

IN THE ABSTRACT:

An Abstract of the Disclosure has been added.

IN THE SPECIFICATION:

Page 1, the second paragraph has been amended at lines 8-18 as follows:

--It is common practice to use organic compounds such as polymers to prepare cosmetic compositions for treating the hair. For example, polymers are used that give, on drying, solid materials for fixing the hairstyle in a shape [are used]. Such materials are also used to give shape-holding effects. Polymer compounds, such as polysiloxanes, are also used to give haircare effects, particularly to damaged hair or hair that is difficult to disentangle. Cosmetic compositions containing these polymers are applied to the hair and left to dry or rinsed out before proceeding to dry.--

Page 1, the fourth paragraph at lines 21-29 has been amended as follows:

--The first drawback lies in the fact that, when the polymers are used in compositions above a certain concentration, the compositions obtained are difficult to apply due to the increase in the viscosity of the [composition] compositions. This difficulty in applying the compositions leads to the hair being overloaded in certain areas and thus to cosmetic defects and also involves certain parts of the hair receiving less of

the compositions, which, in the end, induces a reduced effect on these areas.--

Page 1, the last paragraph at lines 30-34, and page 2, first two lines, has been amended as follows:

--The second drawback lies in the fact that these compositions are occasionally difficult to use. Specifically, polymer compounds of low water solubility require the use of an organic solvent or a mixture of organic solvents. The use of an organic solvent entails several problems, for instance environmental problems and problems affecting the cosmetic quality of the hair.--

Page 2, the first through fourth full paragraphs at lines 3-31 have been amended as follows:

--To overcome these drawbacks, attention has thus turned toward the use of polymer compounds that have been made partially water-soluble. Thus, certain polymer compounds may be used in water without adding any co-solvent. In this case, the limitation lies in the fact that these polymer compounds are partially, or even totally, removed by rinsing the hair. Consequently, in this case, the effect due to the polymer compounds is very limited after rinsing. Ultimately, this limits the effect of rinse-out treatments (shampooing, conditioning), but also reduces the advantage of such compositions used in leave-in mode (hairsetting lotions, mousses, lacquers, etc.) since the user loses the effect acquired by the treatment when the user [he] washes [his] the hair.

Efforts have thus been devoted toward finding compounds for formulating cosmetic compositions that can be used in water and that [show remanence of] retain their effect when the hair is rinsed.

Thus, [US patent No. 4 344 763] U.S. Patent No. 4,344,763 (Gillette) describes cosmetic compositions comprising an organosiloxane monomer such as an aminoalkylalkoxysilane and an organic titanate dissolved in an alcohol.

More specifically, [said] the patent describes a process for shaping the hair[,] which consists in moistening the hair with water and then in applying a solution containing, in isopropanol, from 0.5% to 15% by weight of an aminoalkylalkoxysilane and from 0.005% to 1.5% by weight of an organic titanate, and then in placing the hair in the desired shape.--

Page 3, the second full paragraph at lines 4-10 has been amended as follows:

--A process has also been disclosed, in [patent EP-113 992] EP 113 992, for simultaneously fixing and conditioning the hair using a composition that is stable in the absence of moisture, containing (A) a siloxane oligomer containing at least one nitrogen-hydrogen bond, and (B) an anhydrous, readily hydrolyzable additive chosen from titanates, zirconates, vanadates, [and] germanates, and mixtures thereof.--

Page 3, last paragraph at lines 31-33 through page 4, lines 1-6 has been amended as follows:

--The inventors have [Applicant has] found, surprisingly, that it is possible to formulate cosmetic compositions not requiring the use of an organic solvent and having an effective, rinse-fast cosmetic effect, without the risk of problems of the hair being charged in the event of overloading, by using in these compositions unpolymerized or relatively unpolymerized, water-soluble organosilicon compounds comprising at least one basic and partially neutralized chemical function.--

Page 4, the second and third full paragraphs have been replaced as follows:

--It has been observed that when such compositions are applied, pronounced cosmetic effects are obtained[,] without any problems in the event of overloading, and the effects of which are very rinse-fast and wash-fast.

According to the invention, the cosmetic compositions, in particular for treating the hair, comprise, in a cosmetically acceptable aqueous medium, at least 0.02% by weight, relative to the total weight of the composition, of one or more unpolymerized or relatively unpolymerized, water-soluble organosilicon compounds chosen from organosilanes comprising one silicon atom and organosiloxanes comprising two or three silicon atoms, the organosilicon compounds also comprising at least one basic chemical function and at least two hydrolyzable or hydroxyl groups per molecule, characterized in that the compositions comprise [it comprises] an amount of a neutralizing agent such that the unpolymerized or relatively unpolymerized organosilicon compounds are neutralized to a proportion of from 1/1000 to 99/100 and preferably from 0.2/100 to 70/100.--

Page 5, last three subparagraphs at lines 26-28 have been amended as follows:

--R<sub>4</sub> represents a halogen or an [a group] OR' or R'<sub>1</sub> group;

R<sub>5</sub> represents a halogen or an [a group] OR" or R'<sub>2</sub> group;

R<sub>6</sub> represents a halogen or an [a group] OR''' or R'<sub>3</sub> group;--

Page 6, the second and third paragraphs at lines 7-14 have been amended as follows:

--at least two of the groups  $R_4$ ,  $R_5$  and  $R_6$  being other than the groups  $R'_1$ ,  $R'_2$  and  $R'_3$ .

Preferably,  $R_1$ ,  $R_2$ ,  $R'$ ,  $R''$  and  $R'''$ ,  $R'_1$ ,  $R'_2$  and  $R'_3$  represent a  $C_1$  to  $C_{12}$  alkyl group, a  $C_6$  to  $C_{14}$  aryl group, a ( $C_1$  to  $C_8$ )alkyl( $C_6$  to  $C_{14}$ )aryl group or [and] a ( $C_6$  to  $C_{14}$ )aryl( $C_1$  to  $C_8$ )alkyl group; and  $R_3$  is preferably a  $C_1$  to  $C_{12}$  alkyl group, a  $C_6$  to  $C_{14}$  aryl group, a ( $C_1$  to  $C_8$ )alkyl( $C_6$  to  $C_{14}$ )aryl group or [and] a ( $C_6$  to  $C_{14}$ )aryl( $C_1$  to  $C_8$ )alkyl group.--

Page 6, the second-fourth subparagraphs at lines 21-23 have been amended as follows:

-- $R'_4$  represents a halogen or an [a group]  $OR_{11}$  group;

$R_7$  represents a halogen or an [a group]  $OR_{10}$  or  $R''_1$  group;

$R_9$  represents a halogen or an [a group]  $OR_8$ ,  $R''_2$  or  $R_3NR_1R_2$  group;--

Page 7, the fifth full paragraph at lines 11-17 has been amended as follows:

--One important aspect of the compositions of the invention is that the unpolymerized or relatively unpolymerized organosilicon compounds are partially neutralized using a neutralizing agent or pH regulator, such that the neutralization reaches 1/1000 to 99/100 and better still from 0.2/100 to 70/100. More preferably, the neutralization is from 0.2/100 to 70/100.--

Page 11, the last paragraph at lines 17-20 has been amended as follows:

--The compositions are introduced into an aerosol can in a proportion of 65 g. The aerosol can is fitted with a 51 P valve and a C0<sub>2</sub> [CO<sub>2</sub>] 045 diffuser. 35 g of dimethyl ether are added to each can.--

Page 13, the last paragraph at lines 20-24 has been amended as follows:

--The results show that with the partially neutralized compositions according to the invention[,] a better feel quality after disentangling is obtained, in leave-in application, compared with a non-neutralized composition.--

IN THE CLAIMS:

Original claims 1-10 have been cancelled and new claims 11-22 substituted therefor.

ABSTRACT OF THE DISCLOSURE

The invention concerns a composition comprising in a cosmetically acceptable aqueous medium, at least 0.02 weight percent relative to the composition total weight, one or several water soluble organosilicon compounds, having one, two or three silicon atoms, at least a basic chemical function and at least two hydroxyl groups or groups capable of being hydrolyzed per molecule, said organosilicon compounds being partly neutralized with at least a neutralizing agent. The invention is applicable to hair care compositions.

**COSMETIC COMPOSITION BASED ON PARTIALLY NEUTRALIZED  
ORGANOSILICON COMPOUNDS**

The present invention relates generally to  
5 aqueous cosmetic compositions, in particular for treating  
the hair, comprising unpolymerized or relatively  
unpolymerized, water-soluble organosilicon compounds.

It is common practice to use organic compounds  
such as polymers to prepare cosmetic compositions for  
10 treating the hair. For example, polymers that give, on  
drying, solid materials for fixing the hairstyle in a shape  
are used. Such materials are also used to give shape-  
holding effects. Polymer compounds, such as polysiloxanes,  
are also used to give haircare effects, particularly to  
15 damaged hair or hair that is difficult to disentangle.  
Cosmetic compositions containing these polymers are applied  
to the hair and left to dry or rinsed out before proceeding  
to dry.

The use of polymer compounds presents many  
20 drawbacks.

The first drawback lies in the fact that, when  
the polymers are used in compositions above a certain  
concentration, the compositions obtained are difficult to  
apply due to the increase in the viscosity of the  
25 composition. This difficulty in applying the compositions  
leads to the hair being overloaded in certain areas and  
thus to cosmetic defects and also involves certain parts of  
the hair receiving less of the compositions, which, in the  
end, induces a reduced effect on these areas.

30 The second drawback lies in the fact that these  
compositions are occasionally difficult to use.  
Specifically, polymer compounds of low water solubility  
require the use of an organic solvent or a mixture of  
organic solvents. The use of organic solvent entails

several problems, for instance environmental problems and problems affecting the cosmetic quality of the hair.

To overcome these drawbacks, attention has thus turned toward the use of polymer compounds that have been 5 made partially water-soluble. Thus, certain polymer compounds may be used in water without adding any co-solvent. In this case, the limitation lies in the fact that these polymer compounds are partially, or even totally, removed by rinsing the hair. Consequently, in this case, 10 the effect due to the polymer compounds is very limited after rinsing. Ultimately, this limits the effect of rinse-out treatments (shampooing, conditioning), but also reduces the advantage of such compositions used in leave-in mode (hairsetting lotions, mousses, lacquers, etc.) since the 15 user loses the effect acquired by the treatment when he washes his hair.

Efforts have thus been devoted toward finding compounds for formulating cosmetic compositions that can be used in water and that show remanence of their effect when 20 the hair is rinsed.

Thus, US patent No. 4 344 763 (Gillette) describes cosmetic compositions comprising an organosiloxane monomer such as an aminoalkylalkoxysilane and an organic titanate dissolved in an alcohol.

25 More specifically, said patent describes a process for shaping the hair, which consists in moistening the hair with water and then in applying a solution containing, in isopropanol, from 0.5% to 15% by weight of an aminoalkylalkoxysilane and from 0.005% to 1.5% by weight 30 of an organic titanate, and then in placing the hair in the desired shape.

According to this process, it is particularly recommended to keep the isopropanol solution protected from any moisture.

A process has also been disclosed, in patent 5 EP-113 992, for simultaneously fixing and conditioning the hair using a composition that is stable in the absence of moisture, containing (A) a siloxane oligomer containing at least one nitrogen-hydrogen bond, and (B) an anhydrous, readily hydrolyzable additive chosen from titanates, 10 zirconates, vanadates and germanates, and mixtures thereof.

The solvent for the composition is an aliphatic hydrocarbon or an aliphatic halohydrocarbon, preferably 1,1,1-trichloroethane.

After applying the composition to the hair, the 15 hair is placed in a humid atmosphere so as to bring about the crosslinking of the siloxane oligomer and of the readily hydrolyzable anhydrous additive.

There is thus a need for a stable cosmetic composition, in particular for treating the hair, which is 20 essentially aqueous and which makes it possible to obtain a sufficient cosmetic effect, in particular for the hair, in rinse-out or leave-in mode.

One subject of the present invention is thus 25 stable, aqueous cosmetic compositions, in particular cosmetic compositions for hair treatment and haircare, which overcome the drawbacks of the prior art.

More specifically, one subject of the present invention is stable, aqueous cosmetic compositions for hair treatment and haircare, which give the hair a long-lasting 30 styling effect and a pleasant feel.

The Applicant has found, surprisingly, that it is possible to formulate cosmetic compositions not requiring the use of an organic solvent and having an effective,

rinse-fast cosmetic effect, without the risk of problems of the hair being charged in the event of overloading, by using in these compositions unpolymerized or relatively unpolymerized, water-soluble organosilicon compounds 5 comprising at least one basic and partially neutralized chemical function.

It has been observed that when such compositions are applied, pronounced cosmetic effects are obtained, without any problems in the event of overloading, and the 10 effects of which are very rinse-fast and wash-fast.

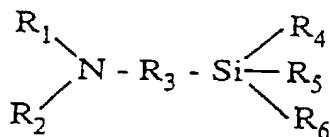
According to the invention, the cosmetic compositions, in particular for treating the hair, comprise, in a cosmetically acceptable aqueous medium, at least 0.02% by weight, relative to the total weight of the 15 composition, of one or more unpolymerized or relatively unpolymerized, water-soluble organosilicon compounds chosen from organosilanes comprising one silicon atom and organosiloxanes comprising two or three silicon atoms, the organosilicon compounds also comprising at least one basic 20 chemical function and at least two hydrolyzable or hydroxyl groups per molecule, characterized in that it comprises an amount of a neutralizing agent such that the unpolymerized or relatively unpolymerized organosilicon compounds are neutralized to a proportion of from 1/1000 to 99/100 and 25 preferably from 0.2/100 to 70/100.

The organosilicon compounds according to the invention are capable of forming, in aqueous medium, a nonhybrid compound, after self-condensation and evaporation of the support. The expression "nonhybrid compound" means a 30 compound that is chemically homogeneous as regards silicon, that is to say that it contains no other additional metallic or organometallic species.

The unpolymerized or relatively unpolymerized organosilicon compounds that are useful in the compositions of the present invention are chosen from water-soluble organosilanes comprising one silicon atom and water-soluble organosiloxanes comprising two or three silicon atoms, preferably two silicon atoms. They must also comprise at least one basic chemical function, and preferably only one basic chemical function. The basic chemical function may be any function that gives the silicon compound a basic nature without harming its solubility in water and is preferably an amine function such as a primary, secondary or tertiary amine function. The basic chemical function of the silicon compounds according to the invention may optionally comprise other functions such as, for example, another amine function, an acid function or a halogen function.

The organosilicon compounds that are useful in the compositions of the present invention also comprise at least two hydrolyzable or hydroxyl groups per silicon atom. The hydrolyzable groups are preferably alkoxy, aryloxy or halogen groups. They may also optionally comprise other chemical functions such as acid or amine functions.

The organosilanes that are preferred according to the invention correspond to the formula:



in which:

R<sub>4</sub> represents a halogen or a group OR' or R'₁;

R<sub>5</sub> represents a halogen or a group OR" or R'₂;

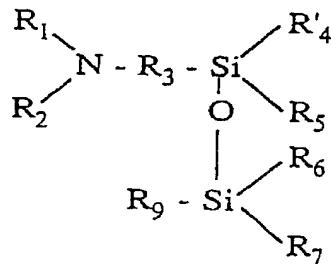
R<sub>6</sub> represents a halogen or a group OR'' or R'₃;

and  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R'$ ,  $R''$ ,  $R'_1$ ,  $R'_2$  and  $R'_3$  represent, independently of each other, a saturated or unsaturated, linear or branched hydrocarbon-based group optionally bearing additional chemical groups such as acid or amine groups,  $R_1$ ,  $R_2$ ,  $R'$ ,  $R''$  and  $R'''$  also possibly denoting hydrogen, and

at least two of the groups  $R_4$ ,  $R_5$  and  $R_6$  being other than groups  $R'_1$ ,  $R'_2$  and  $R'_3$ .

Preferably,  $R_1$ ,  $R_2$ ,  $R'$ ,  $R''$ ,  $R'_1$ ,  $R'_2$  and  $R'_3$  represent a  $C_1$  to  $C_{12}$  alkyl group, a  $C_6$  to  $C_{14}$  aryl group, a ( $C_1$  to  $C_8$ )alkyl( $C_6$  to  $C_{14}$ )aryl group and a ( $C_6$  to  $C_{14}$ )aryl( $C_1$  to  $C_8$ )alkyl group; and  $R_3$  is preferably a  $C_1$  to  $C_{12}$  alkyl group, a  $C_6$  to  $C_{14}$  aryl group, a ( $C_1$  to  $C_8$ )alkyl( $C_6$  to  $C_{14}$ )aryl group and a ( $C_6$  to  $C_{14}$ )aryl( $C_1$  to  $C_8$ )alkyl group.

The organosiloxanes that are preferred in the compositions of the present invention may be represented by the formula:



in which:

$R_1$ ,  $R_2$ ,  $R_3$ ,  $R_5$  and  $R_6$  are defined as above;  
 $R'_4$  represents a halogen or a group  $OR_{11}$ ;  
 $R_7$  represents a halogen or a group  $OR_{10}$  or  $R''_1$ ;  
 $R_9$  represents a halogen or a group  $OR_8$ ,  $R''_2$  or  $R_3NR_1R_2$ ;  
 $R''_1$ ,  $R''_2$ ,  $R_8$ ,  $R_{10}$  and  $R_{11}$  represent a saturated or unsaturated, linear or branched hydrocarbon-based group

optionally bearing additional chemical groups such as basic solubilizing groups;

$R_{11}$ ,  $R_{10}$  and  $R_8$  also possibly denoting hydrogen.

Preferably,  $R''_1$ ,  $R''_2$ ,  $R_8$  or  $R_{10}$  and  $R_{11}$  represent a 5  $C_1$  to  $C_{12}$  alkyl group, a  $C_6$  to  $C_{14}$  aryl group, a ( $C_1$  to  $C_8$ )alkyl( $C_6$  to  $C_{14}$ )aryl group and a ( $C_6$  to  $C_{14}$ )aryl( $C_1$  to  $C_8$ )alkyl group.

At least one of the groups  $R_6$ ,  $R_7$  and  $R_9$  denotes a halogen or a group  $OR''$ ,  $OR_{10}$  or  $OR_8$ .

10 Preferably, the halogen is chlorine.

One important aspect of the compositions of the invention is that the unpolymerized or relatively unpolymerized organosilicon compounds are partially neutralized using a neutralizing agent or pH regulator, 15 such that the neutralization reaches 1/1000 to 99/100 and better still from 0.2/100 to 70/100. More preferably, the neutralization is from 0.2/100 to 60/100.

The pH regulators may be any cosmetically acceptable acids or mixtures of acids. Among the acids that 20 may be used, mention may be made of hydrochloric acid, nitric acid and mono-, di- or tricarboxylic organic acids.

This partial neutralization of the unpolymerized or relatively unpolymerized organosilicon compounds of the compositions of the invention represents an important 25 aspect for the production of the desired properties for the compositions.

Another important aspect of the compositions according to the invention is that the organosilicon compounds, the pH regulators and also the other 30 constituents of the composition are chosen such that this composition contains large amounts of the unpolymerized or relatively unpolymerized organosilicon compounds, that is to say compounds comprising one, two or three silicon

atoms. Thus, it is necessary for the composition to contain, relative to the total weight of the composition, at least 0.02% of unpolymerized or relatively unpolymerized organosilicon compounds and preferably at least 0.5% by weight, possibly ranging up to 50% by weight.

The content of unpolymerized or relatively unpolymerized organosilicon compounds according to the invention is determined by the usual analysis methods such as silicon-29 and proton NMR spectroscopy, and by chromatography.

The compositions according to the invention are aqueous compositions. However, it is possible, for example for the use of adjuvants, to add a cosolvent such as an alcohol or a ketone, for example ethanol or acetone.

In a known manner, all the compositions of the invention may contain adjuvants commonly used in cosmetics, such as oils, waxes or other common fatty substances; standard gelling agents and/or thickeners; emulsifiers; moisturizers; emollients; sunscreens; hydrophilic or lipophilic active agents, for instance ceramides; free-radical scavengers; surfactants; polymers; proteins; bactericides; sequestering agents; antidandruff agents; antioxidants; preserving agents; fragrances; fillers; dyestuffs.

The amounts of these various adjuvants are those conventionally used in the field under consideration.

Needless to say, a person skilled in the art will take care to select the optional compound(s) added to the composition according to the invention such that the advantageous properties intrinsically associated with the composition in accordance with the invention are not, or are not substantially, adversely affected by the envisaged addition.

The compositions according to the invention may be used in rinse-out or leave-in mode.

5 The compositions according to the invention may be in any form that is suitable for topical application, especially in the form of solutions of the lotion or serum type; in the form of aqueous gels; in the form of emulsions obtained by dispersing a fatty phase in an aqueous phase (O/W) or, conversely, (W/O), of more or less thick liquid consistency such as more or less unctuous milks and creams.

10 These compositions are prepared according to the usual methods.

15 The compositions according to the invention are preferably used as hair products, especially for holding the hairstyle or for shaping the hair. They may also give the hair a temporary coloration or provide the hair with good protection against the effects of UV radiation, while at the same time providing hair holding or fixing properties.

20 The hair compositions according to the invention are preferably styling products such as hairsetting gels or lotions, blow-drying lotions, and fixing and styling compositions such as lacquers or sprays.

25 The lotions may be packaged in various forms, especially in vaporizers, in pump-dispenser bottles or in aerosol containers to allow an application of the composition in vaporized form or in the form of a mousse. Such packaging forms are indicated, for example, when it is desired to obtain a spray or mousse for fixing or treating the hair.

30 A subject of the present invention is also the use of the composition according to the invention in a process for treating the hair, in order to hold and/or color it.

According to one embodiment of this process, the composition is applied to rinsed or unrinsed hair, preferably in the form of a spray, either using a pump-dispenser bottle or using an aerosol.

5 After spraying onto the head of hair, the composition is left to act and to dry.

The hair may be rinsed after applying the composition.

10 The hair may be placed in the desired shape, either before the application or immediately after.

The drying time may be variable and depends on the nature of the composition.

After combing, the hair has a very pleasant feel quality.

15 The invention is illustrated by the examples that follow.

EXAMPLE 1

The four formulations below were prepared:

| <u>Compositions</u> | Water-soluble unpolymerized or relatively unpolymerized silicon compound | <u>Neutralizing agent</u>   | <u>Water</u> |
|---------------------|--|---|--------------|
|                     | Aminopropyltriethoxysilane (g per 100 g of composition)                  | Hydrochloric acid (amount of neutralization (normality) relative to the amount of soluble silane) |              |
| 1                   | 12 g   | 0   | qs 100 g     |
| 2                   | 12 g   | 0.5   | qs 100 g     |
| 3                   | 12 g   | 0.25  | qs 100 g     |
| 4                   | 12 g   | 0.75  | qs 100 g     |

5

The silicon-29 NMR analysis shows that these two compositions contain about 10 g of organosilicon compounds containing one, two or three silicon atoms per 100 g of composition (NMR peaks present at a chemical shift ranging 10 from -30 to -75 ppm (tetramethylsilane being used as reference)).

The four compositions are used in the following applications:

15 **Application 1 : Leave-in application. Production of a styling effect.**

The compositions are introduced into an aerosol can in a proportion of 65 g. The aerosol can is fitted with a 51 P valve and a C02 045 diffuser. 35 g of dimethyl ether 20 are added to each can.

Two locks of 5 g of natural hair are prepared. The hairs are held at the roots by a clip and are arranged in a triangle.

5 Compositions 1, 2 and 3 are sprayed onto the locks for 5 seconds per face. After drying (15 minutes), a panel of 8 trained testers evaluates the styling effect, on a scale from 0 to 50; 0 corresponds to no styling effect and 50 to a very strong styling effect.

10 A disentangling is performed and a panel of 8 trained testers evaluates the feel qualities of the locks thus treated.

The feel quality is graded on a scale from 0 to 50; 0 corresponds to a very poor feel quality and 50 to a very pleasant feel quality.

15 The grades from the 8 testers are totalled for each composition and the average is then determined.

The following results are obtained:

| Compositions | Average of the "styling effect" grades | Average of the "feel quality after dis-entangling" grades |
|--------------|--|---|
| 1            | 10                                     | 15  |
| 2            | 30                                     | 20  |
| 3            | 30                                     | 15  |

20 The results show that with the partially neutralized compositions, a better styling effect and a feel quality after disentangling that is at least equal to that of a non-neutralized composition are obtained.

25 **Application 2 : Leave-in application. Production of a styling effect.**

Two locks of 5 g of natural hair are prepared. The hairs are held at the roots and left free over the remainder of the length.

5 The compositions are placed in contact with the locks for 2 minutes (the locks are immersed in 10 ml of the test solution). They are then left to dry for 24 hours.

After drying, the hairs are stuck together in all cases.

10 A disentangling is performed and a panel of 8 trained testers evaluates the feel qualities of the locks thus treated.

The feel quality is graded on a scale from 0 to 50; 0 corresponds to a very poor feel quality and 50 to a very pleasant feel quality.

15 The grades from the 8 testers are totalled for each composition and the average is then determined.

The table summarizes the results:

| Compositions | Average of the "feel quality<br>after disentangling" grades |
|--------------|---|
| 1            | 10  |
| 2            | 25  |
| 3            | 25  |
| 4            | 15  |

20 The results show that with the partially neutralized compositions according to the invention, a better feel quality after disentangling is obtained, in leave-in application, compared with a non-neutralized composition.

**CLAIMS**

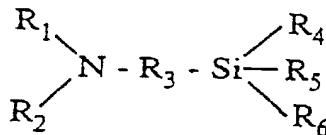
1. A cosmetic composition comprising, in a cosmetically acceptable aqueous medium, at least 0.02% by 5 weight, relative to the total weight of the composition, of one or more unpolymerized or relatively unpolymerized, water-soluble organosilicon compounds chosen from silanes comprising one silicon atom and siloxanes comprising two or three silicon atoms, these organosilicon compounds also 10 comprising at least one basic chemical function and at least two hydrolyzable or hydroxyl groups per molecule, characterized in that it comprises an amount of a neutralizing agent such that the unpolymerized or relatively unpolymerized organosilicon compounds are 15 neutralized to a proportion of from 1/1000 to 99/100 and preferably from 0.2/100 to 70/100.

2. The cosmetic composition as claimed in claim 1, characterized in that the water-soluble, unpolymerized or relatively unpolymerized organosilicon compounds 20 represent at least 0.5% and up to 50% by weight of the composition.

3. The composition as claimed in claim 1 or 2, characterized in that the basic chemical function of the organosilicon compounds is chosen from primary, secondary 25 and tertiary amines.

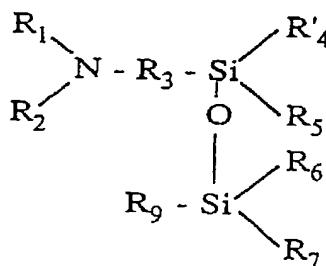
4. The composition as claimed in any one of claims 1 to 3, characterized in that the hydrolyzable groups are chosen from alkoxy, aryloxy and halogen groups.

5. The cosmetic composition as claimed in any 30 one of the preceding claims, characterized in that the unpolymerized or relatively unpolymerized organosilicon compound(s) is (are) chosen from the compounds of formulae:



in which:

R<sub>4</sub> represents a halogen or a group OR' or R'<sub>1</sub>;  
 R<sub>5</sub> represents a halogen or a group OR" or R'<sub>2</sub>;  
 5 R<sub>6</sub> represents a halogen or a group OR''' or R'<sub>3</sub>;  
 R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R', R", R'', R'<sub>1</sub>, R'<sub>2</sub> and R'<sub>3</sub> represent,  
 independently of each other, a saturated or unsaturated,  
 linear or branched hydrocarbon-based group optionally  
 bearing additional chemical groups, R<sub>1</sub>, R<sub>2</sub>, R', R" and R'''  
 10 also possibly denoting hydrogen, at least two of the groups  
 R<sub>4</sub>, R<sub>5</sub> and R<sub>6</sub> being other than groups R'<sub>1</sub>, R'<sub>2</sub> and R'<sub>3</sub>; and



in which:

R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>5</sub> and R<sub>6</sub> are defined as above;  
 15 R'<sub>4</sub> represents a halogen or a group OR<sub>11</sub>;  
 R<sub>7</sub> represents a halogen or a group OR<sub>10</sub> or R"<sub>1</sub>;  
 R<sub>9</sub> represents a halogen or a group OR<sub>8</sub>, R"<sub>2</sub> or R<sub>3</sub>NR<sub>1</sub>R<sub>2</sub>;  
 R"<sub>1</sub>, R"<sub>2</sub>, R<sub>8</sub>, R<sub>10</sub> and R<sub>11</sub> represent a saturated or  
 unsaturated, linear or branched hydrocarbon-based group  
 20 optionally bearing additional chemical groups, the groups  
 R<sub>11</sub>, R<sub>10</sub> and R<sub>8</sub> also possibly denoting hydrogen; at least

one of the groups R<sub>6</sub>, R<sub>7</sub> and R<sub>9</sub> denoting a halogen or a group OR'', OR<sub>10</sub> or OR<sub>8</sub>.

6. The cosmetic composition as claimed in claim 5, characterized in that the groups R<sub>1</sub>, R<sub>2</sub>, R', R'<sub>1</sub>, R'<sub>2</sub>, R'<sub>3</sub>, R'', R''<sub>1</sub>, R''<sub>2</sub>, R<sub>8</sub>, R<sub>10</sub> and R<sub>11</sub> are chosen from C<sub>1</sub> to 5 C<sub>12</sub> alkyl radicals, C<sub>6</sub> to C<sub>14</sub> aryl radicals, (C<sub>1</sub> to C<sub>8</sub>)alkyl(C<sub>6</sub> to C<sub>14</sub>)aryl radicals and (C<sub>6</sub> to C<sub>14</sub>)aryl(C<sub>1</sub> to C<sub>8</sub>)alkyl radicals.

7. The composition as claimed in any one of the 10 preceding claims, characterized in that the neutralizing agent is chosen from acids.

8. The composition as claimed in claim 7, characterized in that the neutralizing agent is chosen from hydrochloric acid, nitric acid and mono-, di- and 15 tricarboxylic organic acids.

9. The composition as claimed in any one of the preceding claims, characterized in that it is a hair product.

10. The composition as claimed in claim 9, 20 characterized in that it is a hair product for holding the hairstyle or for shaping the hair.

SAMAIN et al  
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En ce qui concerne les codes à deux lettres et autres abréviations, se référer aux "Notes explicatives relatives aux codes et abréviations" figurant au début de chaque numéro ordinaire de la Gazette du PCT.

(72) Inventeurs; et  
(75) Inventeurs/Déposants (pour US seulement): SAMAIN, Henri [FR/FR]; 14, rue du Côteau, F-91570 Bièvres (FR). ROLLAT, Isabelle [FR/FR]; 48, rue de Bellevue, F-92100 Boulogne-Billancourt (FR). JEANNE ROSE, Valérie [FR/FR]; 9, passage Desgrais, F-75019 Paris (FR). SANCHEZ, Clément [FR/FR]; 9, Résidence Château de Courcelles, F-91190 Gif-sur-Yvette (FR).

(54) Title: COSMETIC COMPOSITIONS BASED ON PARTLY NEUTRALISED ORGANIC SILICON COMPOUNDS

WO 01/22925 A1 (54) Titre: COMPOSITION COSMETIQUE A BASE DE COMPOSÉS ORGANIQUES DU SILICIUM PARTIELLEMENT NEUTRALISÉS

(57) Abstract: The invention concerns a composition comprising in a cosmetically acceptable aqueous medium, at least 0.02 wt. % relative to the composition total weight, one or several water soluble organic silicon compounds, having one, two or three silicon atoms, at least a basic chemical function and at least two hydroxyl groups or capable of being hydrolysed per molecule, said organic silicon compounds being partly neutralised with at least a neutralising agent. The invention is applicable to hair care compositions.

(57) Abrégé: La composition comprend, dans un milieu aqueux cosmétiquement acceptable, au moins 0,02 % en poids par rapport au poids total de la composition, d'un ou plusieurs composés organiques du silicium solubles dans l'eau, ayant un, deux ou trois atomes de silicium, au moins une fonction chimique basique et au moins deux groupes hydroxyles ou hydrolysables par molécule, ces composés organiques du silicium étant partiellement neutralisés au moyen d'un agent de neutralisation. Application: aux compositions capillaires.

|   |                          |            |
|---|--------------------------|------------|
| <b>DECLARATION<br/>AND<br/>POWER OF ATTORNEY<br/>FOR UTILITY OR DESIGN<br/>PATENT APPLICATION<br/>(37 CFR 1.63)</b> | Attorney Docket Number   | 13833.0011 |
|   | First Named Inventor     |            |
|   | <i>COMPLETE IF KNOWN</i> |            |
|   | Application Number       | /          |
|   | Filing Date              |            |
| Group Art Unit  |                          |            |
| Examiner Name   |                          |            |

**As a below named inventor, I hereby declare that:**

My residence, mailing address, and citizenship are as stated below next to my name.

I believe I am an original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

COSMETIC COMPOSITION BASED ON PARTIALLY NEUTRALIZED ORGANOSILICON COMPOUNDS.

*(Title of the Invention)*

the specification of which

is attached hereto  
OR

I hereby state that I have reviewed and understand the contents of the above-identified specification; including the claims, as amended by any amendment specifically referred to above.

**POWER OF ATTORNEY:** I hereby appoint the practitioner(s) named below to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

| Name   | Registration Number   |
|--|---|
| Stuart T. F. Huang<br>D. Douglas Price<br>Scott D. Watkins |  34,184<br><u>24,514</u><br><u>36,715</u> |

I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), 365(b) of any foreign application(s) for patent or inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

| Prior Foreign Application Number(s) | Country | Foreign Filing Date (MM/DD/YYYY) | Priority<br>Not Claimed | Certified Copy Attached?   |  |
|-------------------------------------|---------|----------------------------------|-------------------------|--|--|
|                                     |         |                                  |                         | YES  | NO   |
|                                     |         |                                  |                         | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> |

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

| Application Number(s) | Filing Date (MM/DD/YYYY) |
|-----------------------|--------------------------|
|                       |                          |

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America listed below, and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability in 37 C.F.R. 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

| U.S. Parent Application or PCT Parent Number | Parent Filing Date (MM/DD/YYYY) | Parent Patent Number<br>(if applicable) |
|--|---------------------------------|---|
|  |                                 |   |

I hereby declare that all statements made herein of own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of First Inventor: 1-00 Henri SAMAIN

(one given name w/o abbreviation plus any other given name or initial and family name)

Inventor's Signature: Henri Samain

Date: April 12, 2002

Residence: Bièvres, France

(city and state or city and foreign country)

Citizenship: French FRX

Mailing Address: 14 rue du Coteau F-91570 Bièvres, France

(street address)

(city and state and ZIP and country)

2-00  
Full Name of Joint Inventor: Isabelle ROLLAT  
(one given name w/o abbreviation plus any other given name or initial and family name)

Inventor's Signature: Isabelle Rollat

Date: April 12, 2002

Residence: Boulogne-Billancourt, France  
(city and state or city and foreign country)

Citizenship: French ERX

Mailing Address: 48 rue de Bellevue F-92100 Boulogne-Billancourt, France  
(street address)  
(city and state and ZIP and country)

3-00  
Full Name of Joint Inventor: Valérie JEANNE ROSE  
(one given name w/o abbreviation plus any other given name or initial and family name)

Inventor's Signature: Valerie Jeanne Rose

Date: April 12 2002

Residence: Paris, France  
(city and state or city and foreign country)

Citizenship: French ERX

Mailing Address: 9 passage Desgrais F-75019 Paris, France  
(street address)

(city and state and ZIP and country)

4-00  
Full Name of Joint Inventor: Clément SANCHEZ  
(one given name w/o abbreviation plus any other given name or initial and family name)

Inventor's Signature: Clément Sanchez

Date: April 12, 2022

Residence: Gif-sur-Yvette, France  
(city and state or city and foreign country)

Citizenship: French ERX

Mailing Address: 9 résidence du Château F-91190 Gif-sur-Yvette, France  
(street address)

(city and state and ZIP and country)